

Claims

What is claimed is:

1. A word prediction method, said method comprising the steps of:
 - specifying a sentence structure consisting of multiple words, including a target word to be predicted;
 - employing said sentence structure to select a word and/or a word sequence that has a modification relationship with said target word to be predicted; and
 - predicting said target word based on said word and/or said word sequence that is selected.
- 10 2. The word prediction method according to claim 1, wherein said word and/or said word sequence constitute a partial analysis tree structure in said sentence structure.
3. The word prediction method according to claim 1, wherein, when multiple words and/or word sequences are selected, word prediction is performed based on said words and/or word sequences that are selected.
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4. A word prediction method, said method comprising the steps of:
- specifying a modification of a word to be predicted by a different word and/or word sequence; and
- prediction said word using said different word and/or word sequence that is specified.
5. The word prediction method according to claim 4, wherein said modification includes a modification direction, and said word to be predicted modifies a prior word.
6. The word prediction method according to claim 4, wherein, when multiple modifications are established between said word to be predicted and said different word and/or word sequence, a word is predicted for each of said modifications.
7. A speech recognition method, said method comprising the steps of:
- specifying the structure of a phrase from the beginning of a sentence to the j-th word (j=0, 1, 2, ...);

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- employing a sentence structure up to said j-th word to specify one or multiple partial analysis trees modifying the (j+1)th word;
- predicting said (j+1)th word based on said one or multiple partial analysis trees;
- obtaining a sentence for a phrase including said predicted (j+1)th word and the probability value for said sentence structure; and
- performing the above steps up to the last word of said sentence, and selecting, as speech recognition results, a sentence structure and a word sequence having maximum probability values.
8. A word prediction apparatus comprising:
- a storer which stores a dictionary wherein text data that have been learned is written; and
- a predictor which employs a structure of a sentence consisting of multiple words, including a word to be predicted, to select a word and/or a word sequence that has a modification relationship with said word to be predicted, and which predicts said word based on said word and/or said word sequence that is selected.

9. A word prediction apparatus comprising:
- a storer which stores a dictionary wherein text data that have been learned is written; and
- a predictor which selects a word and/or a word sequence that has a modification relationship with a word to be predicted, and which predicts said word based on said word and/or said word sequence that is selected.
10. The word prediction apparatus according to claim 9, wherein, for a predetermined word or word sequence based on said text data, a frequency where at another predetermined word appears is stored in said dictionary.
- 10 11. The word prediction apparatus according to claim 10, wherein said predictor calculates a probability value for a word sequence including a word that is predicted based on said frequency.
12. The word prediction apparatus according to claim 11, wherein said predictor selects, as a prediction result, a word sequence having the maximum probability value.

13. A speech recognition apparatus comprising:
- an acoustic processor which converts an input analog speech signal into
a digital signal;
- a first storer which stores an acoustic model that has learned a feature of
5 speech;
- a second storer which stores a dictionary wherein an appearance
frequency of a predetermined word relative to another predetermined word and/or word
sequence is written; and
- a recognizer which uses said acoustic model and said dictionary to
10 calculate a probability value for said digital signal, and which recognizes a word having
the maximum probability value as input speech, wherein said recognizer predicts a
word to be predicted based on a structure of a sentence including said word, and
employs said appearance frequency to calculate said probability value for said
sentence, including said word that is predicted.

14. A computer system comprising:

a specifier which specifies a modification relationship between a word to be predicted and another word and/or word sequence, and which predicts said word by employing said word and/or word sequence modifying said word; and

5 a display which displays said word that is predicted, and said

modification relationship.

15. A storage medium, on which a computer readable program is stored that

permits a computer to perform:

a first process for specifying a sentence structure consisting of multiple

10 words, including a target word to be predicted;

a second process for employing said sentence structure to select a word and/or a word sequence that has a modification relationship with said target word to be predicted; and

a third process for predicting said target word based on said word and/or

15 said word sequence that is selected.

16. A storage medium, on which a computer readable program is stored, that permits a computer to perform:

a first process for specifying a modification relationship between a word to be predicted and a different word and/or word sequence; and

5 a second process for predicting said word using said different word and/or word sequence that is specified.

17. A program transmission apparatus comprising:

a storer which stores a program permitting a computer to perform

10 a first process for specifying a sentence structure of a multiple word sentence, including a target word to be predicted,

a second process for employing said sentence structure to select a word and/or a word sequence that has a modification relationship with said target word to be predicted, and

15 a third process for predicting said target word based on said word and/or said word sequence that is selected; and

a transmitter which reads said program from said storer and transmits
said program.

18. A program transmission apparatus comprising:

a storer which stores a program permitting a computer to perform

5 a first process for specifying a modification relationship between
a word to be predicted and a different word and/or word sequence, and

a second process for predicting said word using said different
word and/or word sequence that is specified; and

10 a transmitter which reads said program from said storer and transmits
said program.

19. A program storage device readable by machine, tangibly embodying a
program of instructions executable by the machine to perform method steps for word
prediction, said method comprising the steps of:

specifying a sentence structure consisting of multiple words, including a
15 target word to be predicted;

employing said sentence structure to select a word and/or a word sequence that has a modification relationship with said target word to be predicted; and predicting said target word based on said word and/or said word sequence that is selected.

5 20. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for word prediction, said method comprising the steps of:

specifying a modification of a word to be predicted by a different word and/or word sequence; and

10 prediction said word using said different word and/or word sequence that is specified.

21. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for speech recognition, said method comprising the steps of:

15 specifying the structure of a phrase from the beginning of a sentence to the j-th word (j=0, 1, 2, ...);

employing a sentence structure up to said j-th word to specify one or multiple partial analysis trees modifying the (j+1)th word;

predicting said (j+1)th word based on said one or multiple partial analysis trees;

5 obtaining a sentence for a phrase including said predicted (j+1)th word and the probability value for said sentence structure; and

performing the above steps up to the last word of said sentence, and selecting, as speech recognition results, a sentence structure and a word sequence having maximum probability values.